

CITY OF BEDFORD



1526 Turkey Mountain Road
Bedford, Virginia

Department of Water/Wastewater Treatment

2011 ANNUAL DRINKING WATER QUALITY REPORT

City of Bedford Municipal Water System

Meets all drinking water standards

- Is continuously tested
- Is safe to drink

The City of Bedford Water Treatment System is pleased to present to you this Annual Drinking Water Quality Report for 2011 as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the safety and quality of your water.

TYPE AND SOURCE OF OUR WATER SUPPLY

Our main water source is the Stoney Creek Reservoir located in Bedford County, which is a surface water source. We have a supplemental source located in Bedford County that is used presently during periods of dry weather and could be utilized in the future as demand increases. A source water assessment of our system was conducted in 2002 by the Virginia Department of Health. The sources were determined to be of high susceptibility to contamination, using the criteria developed by the state in its approved Source Water Assessment Program.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available by contacting your water system representative at the phone number or address given elsewhere in this drinking water quality report.

STRIVING FOR EXCELLENCE

We are pleased to report that our drinking water is safe and meets federal and state requirements. This report shows our water quality and what it means. If you have any questions about this report or concerning your water utility, please contact your Water Treatment Facility Superintendent at 586-7197 during the hours of 8:00 a.m. to 4:00 p.m., Monday through Friday. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled council meetings. They are held on the second and fourth Tuesday at 7:30 p.m. each month in the City of Bedford Council chambers located in the City of Bedford Municipal Building.

SUBSTANCES EXPECTED TO BE IN OUR DRINKING WATER SUPPLY

The City of Bedford Water Treatment System routinely monitors for constituents in your drinking water according to Federal and State laws. The following table shows the results of our monitoring for detected contaminants for the period of January 1st to December 31st, 2011. We are allowed to monitor for certain regulated contaminants less often than once a year. Where this is applicable in the table, it will be noted. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l)-one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal - The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

FACTS & FIGURES

The City of Bedford Water Treatment System is required to test for over 75 constituents to make sure that the water you drink is safe. The regulated constituents shown were detected in our finished drinking water as analyzed between January 1 and December 31, 2011. Finished water is the water that leaves our treatment plant and is distributed throughout the system.

Contaminant	Violation Y/N	Level Detected	Range	% Meeting Requirements	Unit Measurement	MCL	MCLG	Likely Source of Contamination
1. Fluoride	N	0.96 Average	0.37 to 1.44	100%	ppm	4	4	Erosion of natural deposits, water additive which promotes strong teeth
2. Finished Water Turbidity	N	0.31	0.07 to 0.31	100%	NTU	1.00	N/A	Soil run off
3. Copper Sampled during August, 2008	N	0.058 90th Percentile, 0 of 20 samples exceeded action level	< 0.020 to 0.058	100%	ppm	AL = 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits

Contaminant	Violation Y/N	Level Detected	Range	% Meeting Requirements	Unit Measurement	MCL	MCLG	Likely Source of Contamination
4. Lead Sampled during August, 2008	N	< 2 90th Percentile, 1 of 20 samples exceeded action level	All Samples were < 2	100%	ppb	AL = 15	0	Corrosion of household plumbing systems, erosion of natural deposits
5. Total Organic Carbon – Removal Ratio	N	1.07 Actual Annual Removal Ratio	1.0 to 1.38	100%	ratio	1.0 Annual Removal Ratio	NA	Naturally present in the environment
6. Combined Radium pCi / L Sampled 02/12/08	N	0.9		100%	pCi / L	5	0	Erosion of natural deposits
7. Gross Alpha pCi / L Sampled 02/12/08	N	0.3		100%	pCi / L	15	0	Erosion of natural deposits
8. Uranium ug/L Sampled 02/12/08	N	0.45		100%	Ug/L	30	0	Erosion of natural deposits
9. Chlorine	N	2.2	1.2 to 2.2	100%	mg/L	4	4	Water additive to control microbes
10. Total Trihalomethanes	N	67 Running Annual Average	60 to 67	100%	ppb	80 Running Annual Average	NA	By-product of drinking water chlorination
11. Total Haloacetic Acids (5)	N	45 Running Annual Average	40 to 45	100%	ppb	60 Running Annual Average	NA	By-product of drinking water chlorination
12. Aluminum	N	< 0.05	< 0.05	100%	mg/L	Secondary	Secondary	Water addition to promote turbidity removal

PHYSICAL AND MINERAL CHARACTERISTICS for calendar year 2011

In addition to the required analysis that is mainly completed by independent labs we also conduct over 4,000 individual operational tests on your water during the year. The following constituents analyzed in your water on a daily basis are indicators of the appearance, taste, and mineral content of the drinking water delivered to your tap.

Constituent (with unit of measurement)	Frequency	Annual Average
pH, standard units	Every 4 hours	7.4
Alkalinity, ppm	Every 4 hours	24
Total Hardness, ppm	Once per day	33
Calcium Hardness, ppm	Once per day	30
CO2, ppm	Once per day	5
Iron, ppm	Once per day	0.01
Manganese, ppm	Once per day	0.1
Temperature, Celsius	Every 4 hours	14
Free Chlorine, ppm	Continuous monitor in addition to every 4 hours	1.7

VIOLATION INFORMATION

The City of Bedford did not have any MCL or TT (water quality) violations for 2011. In addition, no monitoring violations occurred.

CROSS CONNECTION CONTROL SURVEY

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler / Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional sources of water on the property
- Decorative pond
- Watering trough

SPECIAL HEALTH CONCERNS

Infants and young children are typically more vulnerable to lead in drinking water than the general population. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Bedford is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes or until it becomes cold or reaches a steady temperature before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking, testing methods, and steps you can take to minimize exposure are available from the Safe Drinking Water Hotline at (1-800-426-4791), or at <http://www.epa.gov/safewater/lead>.

Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.

As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water is SAFE at these levels.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More

information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding.

We at the City of Bedford Water Treatment System work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

This Annual Drinking Water Quality Report for 2011 will not be mailed but a copy of this report will be made available to anyone upon request. Copies of this report will be posted on the City of Bedford Web page, at the City of Bedford Main Public Library, and the City of Bedford Municipal Building. Please call our office if you have questions at 586-7197.

FOR YOUR INFORMATION

How will I know if there is a problem with my water?

- ◆ If the amount of any substance exceeds limits, you would be notified through newspapers, radio, and/or other means. With notification, you will be instructed on what appropriate actions you can take to protect your family's health.

If I want more information who do I contact?

- ◆ Water Plant business hours of operation are 8:00 a.m. - 4:00 p.m. and can be reached at 540-586-7197. You can call this number for an emergency 24 hours a day. There is always an operator on duty. Tours of our facility can be scheduled during normal business hours.

To report leaks and overflows

- ◆ Call 540-587-6081 24 hours a day.

Customer Service

- Call 540-587-6081 during the hours of 7:00 a.m. - 4:00 p.m.

Billing

- ◆ Call 540-587-6047 during the hours of 8:30 a.m. and 4:30 p.m.

STEPS OF WATER TREATMENT

- 1 **Coagulation:** Alum and other chemicals are added to water to form tiny sticky particles called "floc" which attract the dirt particles.
- 2 **Flocculation:** Slow mixing to allow floc to get larger so it will gain weight and settle quicker.
- 3 **Sedimentation:** The heavy particles (floc) settle to the bottom and clear water moves to filtration.
- 4 **Filtration:** The water passes through filters that help to remove even smaller particles.
- 5 **Disinfection:** A small amount of chlorine is added to kill any harmful bacteria or microorganisms that may be in the water.
- 6 **Storage:** Water is pumped to a closed tank or reservoir where it flows through pipes to homes and businesses in the community.

The Virginia Department of Health, Office of Drinking Water, City of Bedford's local regulatory agency, has reviewed this Water Quality Report and given acceptance for content and compliance to standards set for water quality reports.